



ControlLogix Redundant Power Supply

Catalog Numbers 1756-PA75R/A (85-265V AC Redundant Power Supply),
1756-PB75R/A (19-32V DC Redundant Power Supply)

Use this publication as a guide when installing the ControlLogix™ 1756-PA75R/A and 1756-PB75R/A power supplies. These supplies may only be used with Series B ControlLogix chassis.

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Important User Information

Solid state equipment has operational characteristics differing from those of electromechanical equipment. *Safety Guidelines for the Application, Installation and Maintenance of Solid State Controls* (Publication SGI-1.1 available from your local Rockwell Automation sales office or online at <http://www.ab.com/manuals/gi>) describes some important differences between solid state equipment and hard-wired electromechanical devices. Because of this difference, and also because of the wide variety of uses for solid state equipment, all persons responsible for applying this equipment must satisfy themselves that each intended application of this equipment is acceptable.

In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

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Throughout this manual we use notes to make you aware of safety considerations.

<p>WARNING</p> 	<p>Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury or death, property damage, or economic loss.</p>
<p>IMPORTANT</p>	<p>Identifies information that is critical for successful application and understanding of the product.</p>
<p>ATTENTION</p> 	<p>Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attentions help you:</p> <ul style="list-style-type: none">• identify a hazard• avoid a hazard• recognize the consequence
<p>SHOCK HAZARD</p> 	<p>Labels may be located on or inside the drive to alert people that dangerous voltage may be present.</p>
<p>BURN HAZARD</p> 	<p>Labels may be located on or inside the drive to alert people that surfaces may be dangerous temperatures.</p>

Environment and Enclosure

ATTENTION

This equipment is intended for use in a Pollution Degree 2 industrial environment, in overvoltage Category II applications (as defined in IEC publication 60664-1), at altitudes up to 2000 meters without derating.

This equipment is considered Group 1, Class A industrial equipment according to IEC/CISPR Publication 11. Without appropriate precautions, there may be potential difficulties ensuring electromagnetic compatibility in other environments due to conducted as well as radiated disturbance.

This equipment is supplied as "open type" equipment. It must be mounted within an enclosure that is suitably designed for those specific environmental conditions that will be present and appropriately designed to prevent personal injury resulting from accessibility to live parts. The interior of the enclosure must be accessible only by the use of a tool. Subsequent sections of this publication may contain additional information regarding specific enclosure type ratings that are required to comply with certain product safety certifications.

NOTE: See NEMA Standards publication 250 and IEC publication 60529, as applicable, for explanations of the degrees of protection provided by different types of enclosure. Also, see the appropriate sections in this publication, as well as the Allen-Bradley publication 1770-4.1 ("Industrial Automation Wiring and Grounding Guidelines"), for additional installation requirements pertaining to this equipment.

Prevent Electrostatic Discharge

ATTENTION

This equipment is sensitive to electrostatic discharge, which can cause internal damage and affect normal operation. Follow these guidelines when you handle this equipment:

- Touch a grounded object to discharge potential static.
 - Wear an approved grounding wriststrap.
 - Do not touch connectors or pins on component boards.
 - Do not touch circuit components inside the equipment.
 - If available, use a static-safe workstation.
 - When not in use, store the equipment in appropriate static-safe packaging.
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European Zone 2 Certification

If you use this product in a European Zone 2 location, consider:

European Zone 2 Certification

This equipment is intended for use in potentially explosive atmospheres as defined by European Union Directive 94/9/EC.

The LCIE (Laboratoire Central des Industries Electriques) certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of Category 3 equipment intended for use in potentially explosive atmospheres, given in Annex II to this Directive. The examination and test results are recorded in confidential report No. 28 682 010.

Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 50021.

IMPORTANT

When using this product, also consider the following:

- This equipment is not resistant to sunlight or other sources of UV radiation.
- The secondary of a current transformer shall not be open-circuited when applied in Class I, Zone 2 environments.
- Equipment of lesser Enclosure Type Rating must be installed in an enclosure providing at least IP54 protection when applied in Class I, Zone 2 environments.
- This equipment shall be used within its specified ratings defined by Allen-Bradley.
- Provision shall be made to prevent the rated voltage from being exceeded by transient disturbances of more than 40% when applied in Class I, Zone 2 environments.

WARNING

If you connect or disconnect wiring while power is on, an electrical arc can occur. This could cause an explosion in hazardous location installations. Be sure that power is removed or the area is nonhazardous before proceeding.

North American Hazardous Location Approval

The following information applies when operating this equipment in hazardous locations:	Informations sur l'utilisation de cet équipement en environnements dangereux :
<p>Products marked "CL I, DIV 2, GP A, B, C, D" are suitable for use in Class I Division 2 Groups A, B, C, D, Hazardous Locations and nonhazardous locations only. Each product is supplied with markings on the rating nameplate indicating the hazardous location temperature code. When combining products within a system, the most adverse temperature code (lowest "T" number) may be used to help determine the overall temperature code of the system. Combinations of equipment in your system are subject to investigation by the local Authority Having Jurisdiction at the time of installation.</p>	<p>Les produits marqués "CL I, DIV 2, GP A, B, C, D" ne conviennent qu'à une utilisation en environnements de Classe I Division 2 Groupes A, B, C, D dangereux et non dangereux. Chaque produit est livré avec des marquages sur sa plaque d'identification qui indiquent le code de température pour les environnements dangereux. Lorsque plusieurs produits sont combinés dans un système, le code de température le plus défavorable (code de température le plus faible) peut être utilisé pour déterminer le code de température global du système. Les combinaisons d'équipements dans le système sont sujettes à inspection par les autorités locales qualifiées au moment de l'installation.</p>
<p>WARNING</p> 	<p>EXPLOSION HAZARD</p> <ul style="list-style-type: none"> Do not disconnect equipment unless power has been removed or the area is known to be nonhazardous. Do not disconnect connections to this equipment unless power has been removed or the area is known to be nonhazardous. Secure any external connections that mate to this equipment by using screws, sliding latches, threaded connectors, or other means provided with this product. Substitution of components may impair suitability for Class I, Division 2. If this product contains batteries, they must only be changed in an area known to be nonhazardous.
<p>AVERTISSEMENT</p> 	<p>RISQUE D'EXPLOSION</p> <ul style="list-style-type: none"> Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher l'équipement. Couper le courant ou s'assurer que l'environnement est classé non dangereux avant de débrancher les connecteurs. Fixer tous les connecteurs externes reliés à cet équipement à l'aide de vis, loquets coulissants, connecteurs filetés ou autres moyens fournis avec ce produit. La substitution de composants peut rendre cet équipement inadapté à une utilisation en environnement de Classe I, Division 2. S'assurer que l'environnement est classé non dangereux avant de changer les piles.

Description of the Redundant Power Supply

These supplies are part of a redundant power supply system that provides additional uptime protection for a chassis used in critical applications. The two remotely-mounted supplies are designed to share the current required by the chassis. They are available in AC (1756-PA75R/A) and DC (1756-PB75R/A) versions that can be mixed or matched when used in tandem.

In the event of a failure by one redundant power supply, the remaining supply will accommodate the entire load of the chassis without disruption to chassis activity.

Overview of the Installation Process

Follow these steps when installing and powering your Redundant Power Supply system.

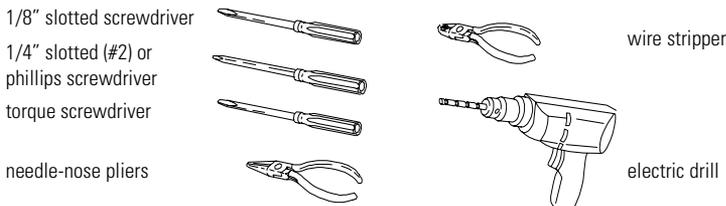
1. Allow Sufficient Mounting Space
2. Install Your Redundant Power Supply
3. Ground Your Redundant Power Supply
4. Connect the Cable to the Redundant Power Supply and the Chassis Adapter Module
5. Connect Solid State Relay
6. Connect Power
7. Activate the Redundant Power Supply System

The steps are described in detail, along with other important information, throughout this installation instructions.

Prepare for Installation

You need the tools shown below to install a ControlLogix redundant power supply.

Figure 1



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Identify the Components of a Redundant Power Supply System

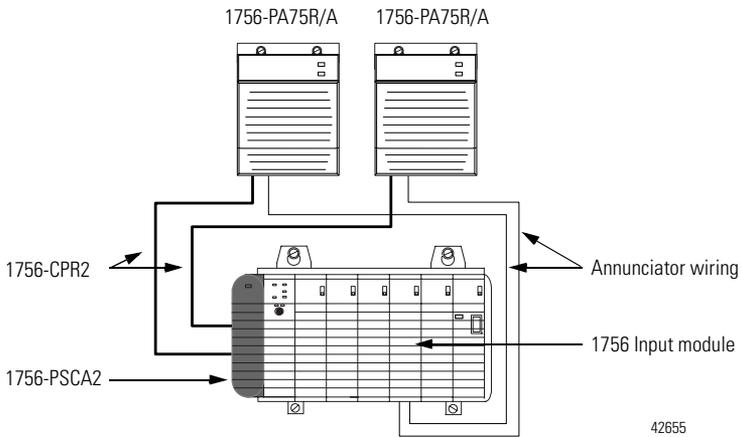
Table 1 Redundant Power Supply System Components

Catalog Number	Description	Quantity
1756-PA75R/A and/or 1756-PB75R/A	Redundant power supply	2
1756-CPR2	Redundant power supply cables (Length = 0.91m [3ft])	2
1756-PSCA2	Redundant power supply chassis adapter module	1
User-supplied ⁽¹⁾	Annunciator wiring (Maximum length = 10m [32.8ft])	2

⁽¹⁾ Optional user-provided annunciator wiring can be connected to the solid state relay for status and troubleshooting purposes. For more information, see pages 15 and 20.

The components are shown below in a typical system configuration:

Figure 2



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Recognize Redundant Power Supply Physical Features

Your redundant power supply has multiple physical features as shown below.

Figure 3

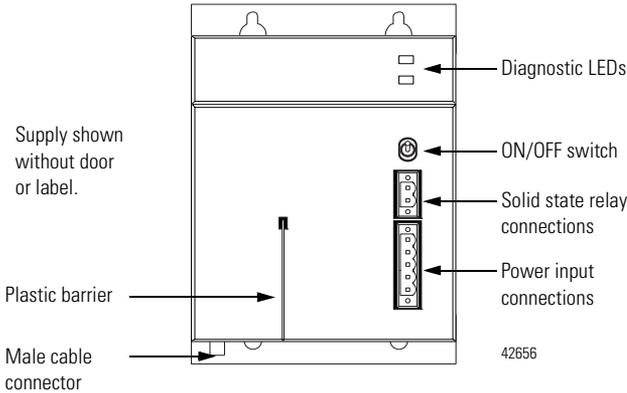


Table 2 Redundant Power Supply Physical Features

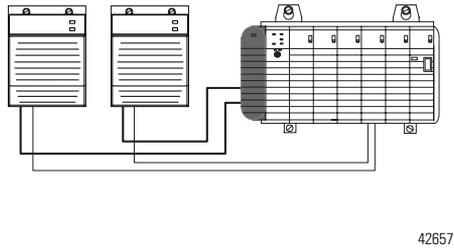
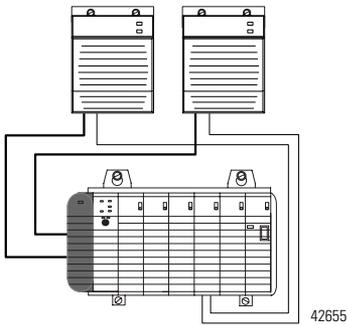
Physical Feature	Description
Plastic barrier	The barrier separates the input power cable from the annunciator cable.
Male cable connector	The cable connector accommodates the female end of the 1756-CPR2 cable and connects power to the chassis. For more information, see page 14.
Diagnostic status indicators	There are two indicators: <ul style="list-style-type: none"> • Power • Non-Red (Nonredundancy) For more information on the status indicators, see page 20.
ON/OFF switch	Switch that turns the backplane power ON and OFF at the connected chassis. (Up is the ON position.)
Solid state relay connections	These contacts allow optional failure annunciation when wired to a standard input module. The solid state relay contacts are normally open, but held closed during normal operation. For more information on these connections, see page 15.
Power input connections	These connections allow you to wire input power to the redundant power supply. For more information on these connections, see page 16.

Use System Set-up Recommendations

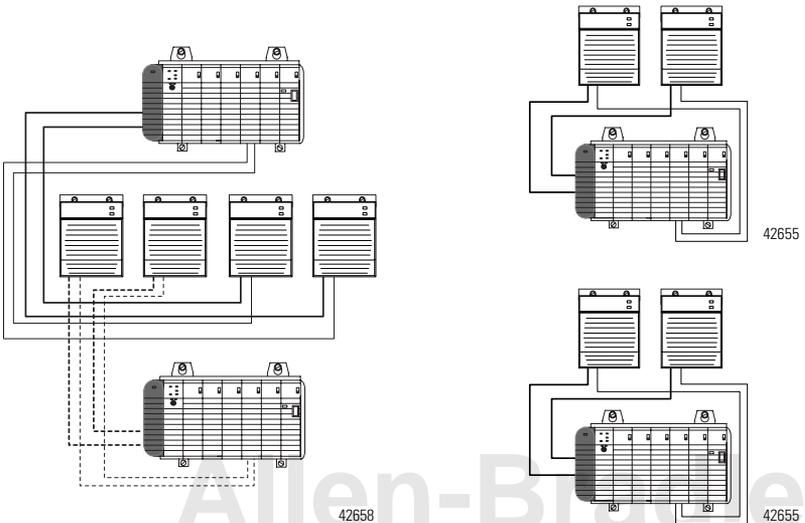
We recommend you use one of the methods shown below when setting up your redundant power supply system.

Figure 4

Recommended Set-Ups for System Using One Chassis



Recommended Set-Ups for System Using Two Chassis



Allow Sufficient Mounting Space

IMPORTANT

Make sure you meet these **minimum** spacing requirements:

- 10.2cm (4in) between redundant power supplies and cabinet housing the control system
- 2.55cm (1in) between redundant power supplies
- 15.3cm (6in) between chassis and heat source
- 5.1cm (2in) between wireway and top or bottom of chassis
- 5.1cm (2in) between wireway and power supply

Figure 5

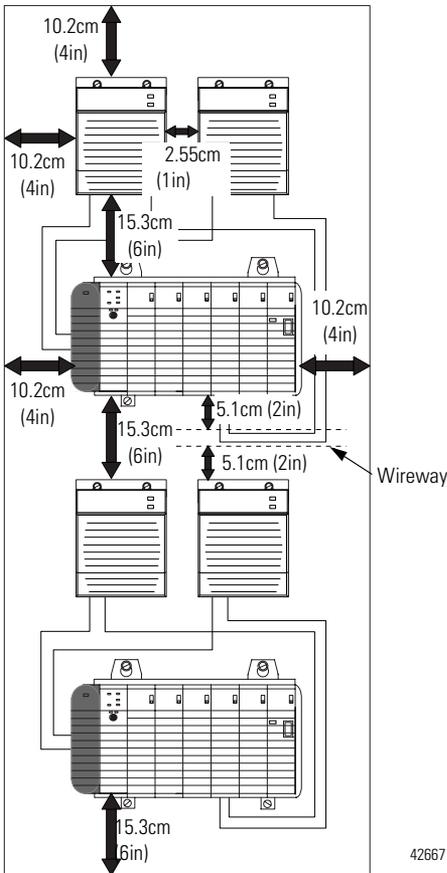


Table 3 lists the widths of each ControlLogix chassis type with a Redundant Power Supply Chassis Adapter module installed. Keep these widths in mind when mounting your chassis.

Table 3 Width of Chassis with Redundant Power Supply Chassis Adapter Module Installed

Catalog Number:	Total Width:
1756-A4	18.5cm (7.30in)
1756-A7	29.0cm (11.44in)
1756-A10	40.5cm (15.96in)
1756-A13	51.0cm (20.10in)
1756-A17	66.0cm (26.0in)

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For more information on spacing requirements between chassis, see the ControlLogix Chassis Installation Instructions, publication number 1756-IN080.

Install Your Redundant Power Supply

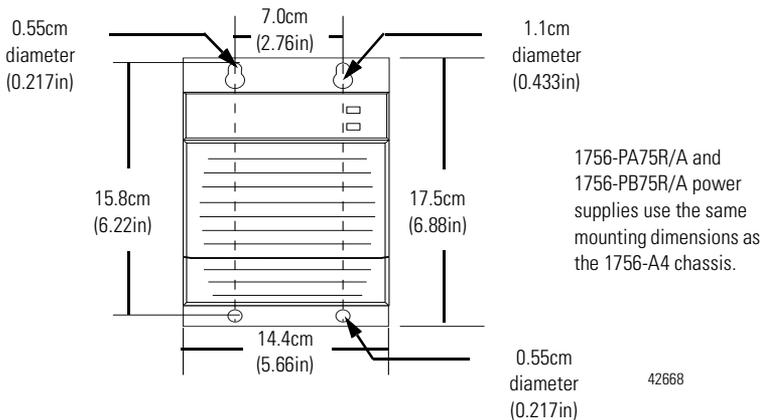
ATTENTION



Do not drill holes for a redundant power supply above installed equipment (e.g. chassis). Metal chips from drilling can damage the backplane and cause intermittent operation.

1. Use the mounting dimensions in Figure 6.

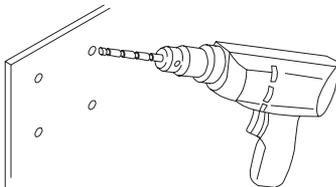
Figure 6



The 1756-PA75R/A and 1756-PB75R/A power supplies use the same mounting dimensions as the 1756-A4 chassis.

2. Drill holes in the back panel of the enclosure for redundant power supply mounting tabs.

Figure 7

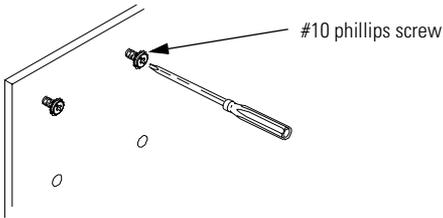


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3. Install the hardware for the top mounting tabs.

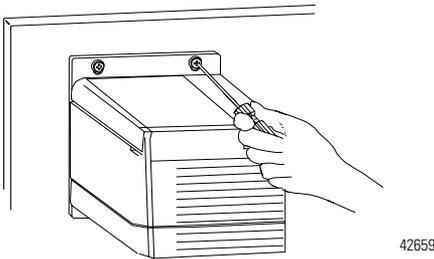
Figure 8



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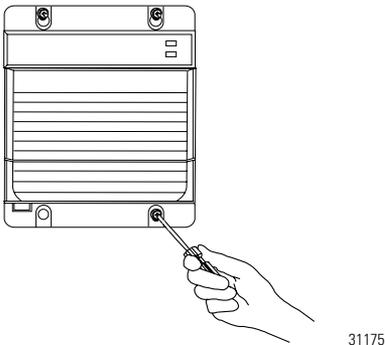
4. Slide the redundant power supply over the installed screws and tighten them.

Figure 9



5. Install the remaining tab screw(s).

Figure 10



Ground Your Redundant Power Supply

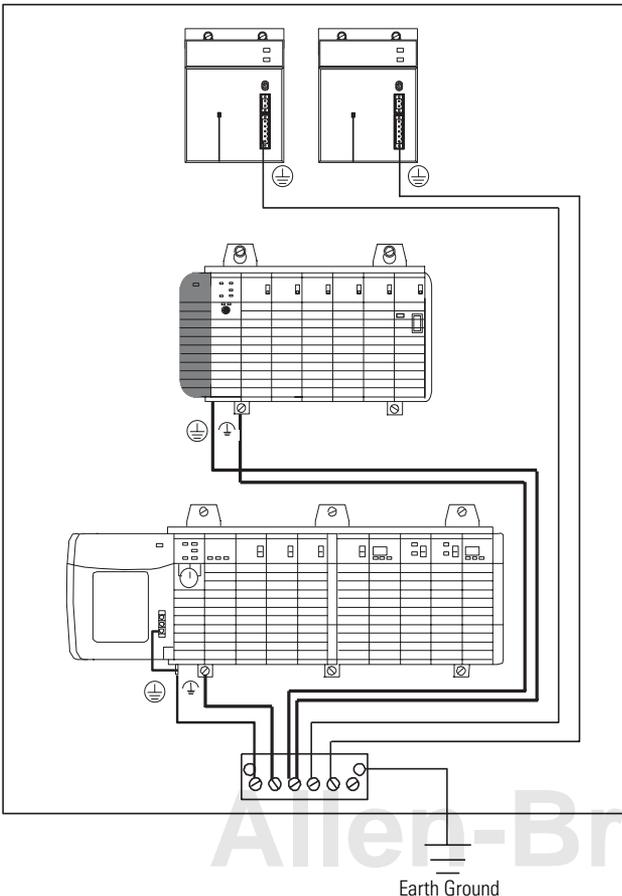
The figure below shows how to run functional and equipment protective earth ground connections from the chassis and power supplies to the ground bus.

For specific information on how to connect ground wiring to the redundant power supply, see page 16. For specific information on how to connect ground wiring to the chassis, see the ControlLogix chassis installation instructions, publication 1756-IN080.

We recommend the following:

- Use a ground bus to reduce the electrical resistance at the connection.
- Keep wire lengths as short as possible.
- Use 14 AWG (2.08 sq. mm) 75°C stranded wire for ground connections.

Figure 11



Connect the Cable to the Redundant Power Supply and the Chassis Adapter Module

Use the 1756-CPR2 cable to connect your redundant power supply to the chassis adapter module. The 1756-CPR2 cable uses two female ends to connect to male connectors on the redundant power supply and the chassis adapter module.

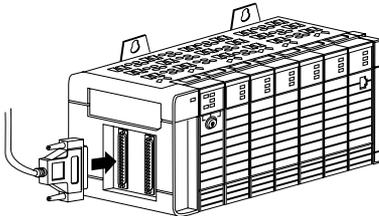
ATTENTION



Make sure the redundant power supply is turned off before connecting the 1756-CPR2 cables to the power supply.

1. Leave a minimum of 4 in (10.2 cm) space between the left side of the chassis adapter module and the cabinet housing your system. The 1756-CPR2 cable will not connect to the module in less than 4 in (10.2 cm) of space.
2. Connect the male end of the 1756-CPR2 cable to the chassis adapter module.

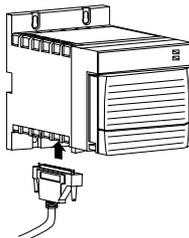
Figure 12



31176-M

3. Connect the female end of the 1756-CPR2 cable to the redundant power supply.

Figure 13



31174-M

4. Tighten the screws to hold the cable in place. Make sure you tighten the screws all the way to hold the cable in place for the life of the product.

For recommendations on how to route the wiring in your redundant power supply application, see page 17.

Connect Solid State Relay

A solid state relay on your redundant power supplies can be connected to an input module. This connection monitors whether the supplies are functioning properly.

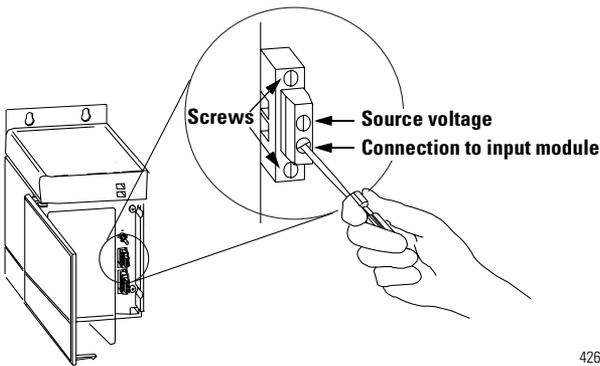
When using the solid state relay, you must wire a source voltage that is compatible with the input module to either contact terminal and then connect the other terminal to the input point.

The relays are closed during standard operation. The solid state relay contacts open in any of the following conditions:

- If one or both of the supplies fail. In this case, the contact open on the failed supply (ies), and the input module alerts you to the failure through the controller program.
- The connected redundant power supplies are turned OFF.

Use Figure 14 to wire the solid state relay on your redundant power supply.

Figure 14



Make sure you tighten the screws on either side of the plug to make sure it is completely mated to the power supply through the life of the product.

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ATTENTION



The annunciator output is rated for resistive loads. It should not be used to drive the coil of an electromagnetic relay.

The annunciator cable must not exceed 10 meters (32.8 feet). For recommendations on how to route the wiring in your redundant power supply application, see page 17.

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Connect Power

ATTENTION

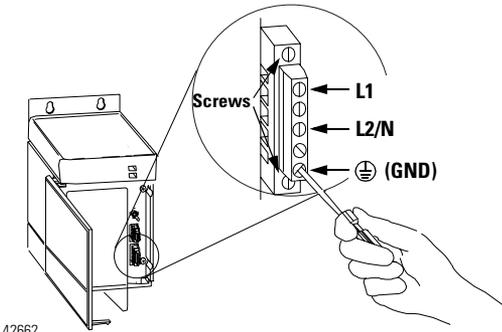


Turn off power lines before connecting power; failure to do so could cause injury to personnel and/or equipment. This equipment must be provided with a disconnect on each ungrounded conductor.

We recommend using #14 AWG (2.08 sq. mm) 75°C copper stranded wire to connect power to each redundant power supply. The diagrams below show how to connect power to the redundant power supply. Tighten the connection terminals to a torque of 7 inch-pounds (0.79Nm).

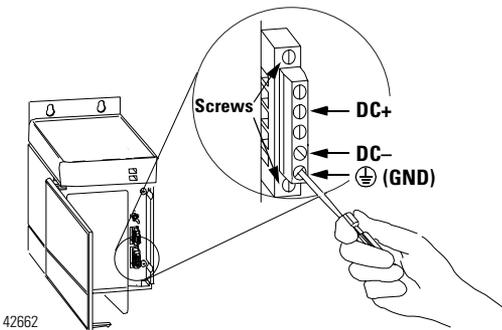
Figure 15

**1756-PA75R/A
(AC source wiring)**



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**1756-PB75R/A
(DC source wiring)**



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IMPORTANT: Tighten the screws on either side of the plug to make sure it is completely mated to the power supply through the life of the product.

Do not use unmarked terminals.

- If you are using AC source wiring, only connect wires to L1, L2/N and GND.
- If you are using DC source wiring, only connect wires to DC+, DC- and GND.

The DC source wiring to the 1756-PB75R supply must not exceed 10 meters (32.8 feet).

IMPORTANT

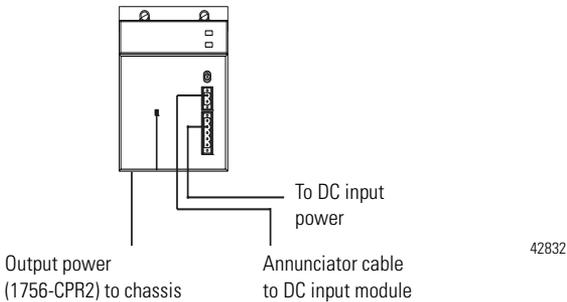
For recommendations on how to route the wiring in your redundant power supply application, see page 17.

Route Line Power and Cables

Follow the guidelines below when wiring a redundant power supply.

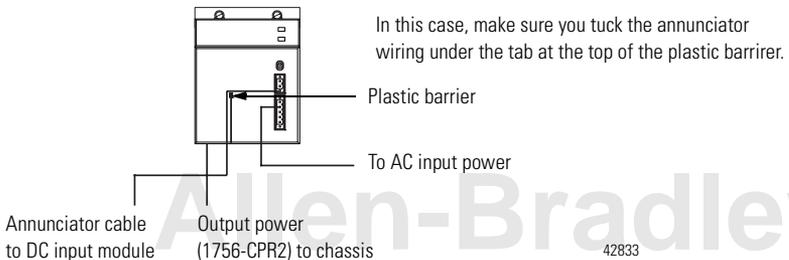
- Never run all three lines together in any application. For example, do not run input power, output power (1756-CPR2) and annunciator cable together.
- If the redundant power supply and the annunciator cable use the same input power source, you can route the power line and annunciator cable together. For example, if your application uses a DC redundant power supply and the annunciator cable is connected to a DC input module, you can route the power source line and annunciator cable together, as shown in Figure 16.

Figure 16



- If the redundant power supply and the annunciator cable use different input power sources, you must route the power line and annunciator cable separately. For example, if your application uses an AC redundant power supply and the annunciator is connected to a DC input module, you must route the power source line and annunciator separately, as shown in Figure 17.

Figure 17



Remove the Protective Label

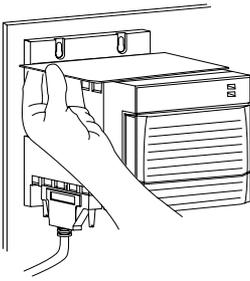
ATTENTION



Make sure the power supply is mounted and all panel fabrication is complete before you remove the protective label. This label protects the power supply from metal shavings falling inside the power supply.

Pull the label off the power supply.

Figure 18

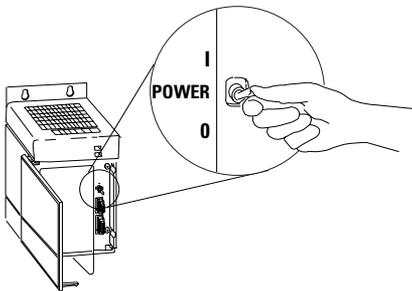


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Activate the Redundant Power Supply System

After you have installed the power supplies and connected them to the appropriate chassis adapter module, flip the switch ON each supply to power the system.

Figure 19



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Input Power Requirements and Transformer Sizing

With the graphs in Figure 20, you can:

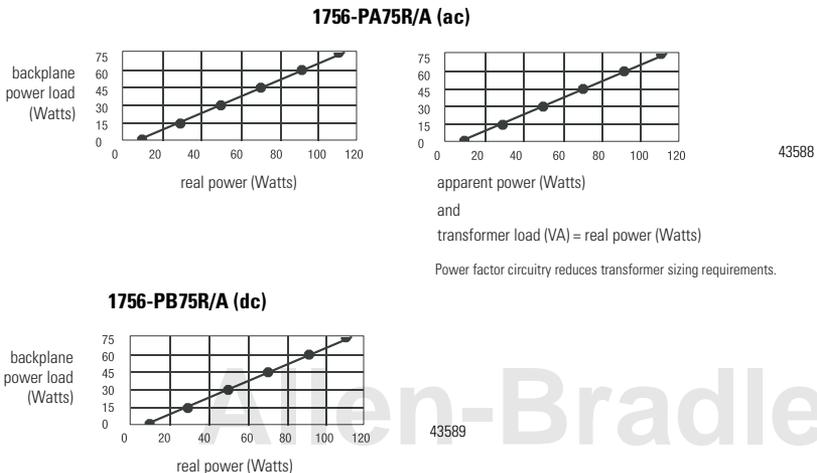
- Use the real power value in watts to determine the amount of heat dissipation you will have inside the enclosure.
- Use the appropriate power value in VA to estimate power distribution sizing.
- Use the transformer load value in VA of each power supply plus all other loads on a transformer to determine the required transformer size.

Use the graphs in Figure 20 to determine the input power requirements for the supplies, given the power they are providing to the modules in the chassis. The vertical axis of each graph shows the backplane power consumed by all of the modules in the chassis; the horizontal axis shows input power requirements of the power supply. To use the graphs:

1. Add all of the backplane power (i.e. watts) for all of the modules in the chassis.
2. Find the number from step 1 on the vertical axis.
3. Follow that value to the right until it intersects the line on the graph.
4. Find the associated input power rating consumed by the power supply on the horizontal axis.

For example, if the power consumption of all of the modules in the chassis is 30 watts, a 1756-PB75R consumed approximately 50 watts of Real Power.

Figure 20



Troubleshoot with the Status Indicators

Your redundant power supply uses the following diagnostic status indicators (LEDs)

- Power - Green
- Non-red (non-redundancy) - Amber

to display possible problems with the supply. At initial power-up, the Power indicator is illuminated.

Table 4 explains the diagnostic indicators and how you can use them to troubleshoot your redundant power supplies.

Table 4 Using Status Indicators to Troubleshoot Your Redundant Power Supply

This combination of status indicators:	Means:	Take this action:
Power - Solid green Non-red - Off	Both supplies are operating properly.	None
Power - Solid green Non-red - Solid amber	This supply is operating properly but is the only supply providing power to the chassis adapter module.	Check the other supply.
Power - OFF Non-red - Solid amber	All possible connections are made, but the redundant power supply is turned OFF.	Turn the supply ON. If the supply does not turn ON, follow these steps: <ol style="list-style-type: none"> 1. Remove input power to supply 2. Wait 15 seconds 3. Reconnect input power 4. Turn supply ON. If the supply still does not turn ON, replace it.
Power - OFF Non-red - OFF	Any of the following conditions may apply: <ol style="list-style-type: none"> 1. The supply is turned OFF. 2. Line voltage is not within the specified range. 3. All connections are made, but input power is not supplied. 4. All connections are made, including input power, but output cable (1756-CPR2) is not connected. 5. The supply is ON but defective. 	Take the appropriately numbered action for each condition: <ol style="list-style-type: none"> 1. Turn the supply ON. 2. Verify that line power is in the specified range. If the indicators remain OFF, cycle power. 3. Verify that input power is supplied and turn the supply ON. 4. Connect output cable and turn the supply ON. 5. Replace the supply.

Replace a Redundant Power Supply

If you must replace a ControlLogix redundant power supply, follow the steps below.

IMPORTANT

You can replace one redundant power supply while the other supply is operating in non-redundant mode without affecting chassis operation.

Remove Power Supply

Follow the steps below to remove the supply.

1. Turn the redundant power supply OFF.
2. Disconnect line power source voltage to the supply and annunciator.
3. Remove the wiring terminal blocks.
4. Unscrew and disconnect the 1756-CPR2 cable from the supply.
5. Loosen mounting bolts and remove the supply.

Replace Power Supply

Follow the steps below to replace a redundant power supply.

1. Slide the replacement redundant power supply over the installed screws and tighten them.
2. Install the remaining tab screw(s) at the bottom of the supply.
3. Ground the replacement supply as described on page 13.
4. Connect all cables to the new supply as described on pages 14-17.
5. Activate power as described on page 18. When you turn ON the replacement redundant power supply, the connected chassis automatically draws power from both redundant power supplies.

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1756-PA75R/A and 1756-PB75R/A Specifications

	1756-PA75R/A	1756-PB75R/A
Location	Near ControlLogix chassis	
Input Voltage Range	85-265V ac	19.2-32V dc
Input Power ⁽¹⁾	120VA, 115W	110W
Output Power	75W @ 60°C (Do not exceed 75W)	
Maximum Backplane Output Current ⁽²⁾	1.5 A @ 1.2 V 4 A @ 3.3 V 13 A @ 5.1 V 2.8 A @ 24 V	
Hold Up Time ⁽³⁾	@ 60 Hz: 2 cycles @ 50Hz: 2 cycles	20mS
Maximum Inrush Current	20A	30A
Frequency Range	47-63Hz	dc
Max. User-Supplied Overcurrent Protection ⁽⁴⁾	15A	
Internal Fuse Protection ⁽⁵⁾	Non-replaceable fuse is soldered in place	
Isolation Voltage	250V continuous	
Input to output	250V continuous	
Status contact to input or output	250V continuous	
Conductors	#14 AWG (2.08 sq. mm) stranded 75°C Copper minimum	
Input Power Wire Size	1 ⁽⁶⁾ - 1756-PA75R	
Category	3 ⁽⁶⁾ - 1756-PB75R	
Solid State Relay Contact	240V ac/dc Do not exceed 50mA - Resistive only	
Annunciator Wiring Category	22-14AWG (0.324 to 2.08 sq. mm) stranded 75°C Copper 3 ⁽⁶⁾	
Cable Assembly Category	1756-CPR2 (Length = 0.91m [3ft]) 3 ⁽⁶⁾	
Connector Screw Torque	7 inch-pounds (0.79Nm)	
Dimensions (W x H x D)	14.4 x 17.5 x 13.7cm (5.67 x 6.90 x 5.40in)	
Weight - approximate	1.45kg (3.2lbs)	
Environmental Specifications		
Operational Temperature	IEC 60068-2-1 (Test Ad, Operating Cold), IEC 60068-2-2 (Test Bd, Operating Dry Heat), IEC 60068-2-14 (Test Nb, Operating Thermal Shock): 0 to 60°C (32 to 140°F)	
Storage Temperature	IEC 60068-2-1 (Test Ab, Un-packaged Non-operating Cold), IEC 60068-2-2 (Test Bb, Un-packaged Non-operating Dry Heat), IEC 60068-2-14 (Test Na, Un-packaged Non-operating Thermal Shock): -40 to 85°C (-40 to 185°F)	

	1756-PA75R/A	1756-PB75R/A
Relative Humidity	IEC 60068-2-30 (Test Db, Un-packaged Non-operating Damp Heat): 5 to 95% non-condensing	
Vibration	IEC 60068-2-6 (Test Fc, Operating): 2g @ 10-500Hz	
Operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 30g	
Non-operating Shock	IEC 60068-2-27 (Test Ea, Unpackaged Shock): 50g	
Emissions	CISPR 11: Group 1, Class A	
ESD Immunity	IEC 61000-4-2: 6kV contact discharges 8kV air discharges	
Radiated RF Immunity	IEC 61000-4-3: 10V/m with 1kHz sine-wave 80%AM from 30MHz to 1000MHz 10V/m with 200Hz 50% Pulse 100%AM at 900Mhz	
EFT/B Immunity	IEC 61000-4-4: ±4kV at 2.5kHz on power ports	
Surge Transient Immunity	IEC 61000-4-5: ±1kV line-line(DM) and ±2kV line-earth(CM) on AC power ports	
Conducted RF Immunity	IEC 61000-4-6: 10Vrms with 1kHz sine-wave 80%AM from 150kHz to 80MHz	
Enclosure Type Rating	None (open-style)	
Voltage Variation	IEC 61000-4-11: 30% dips for 1 period at 0° & 180° on AC supply ports 60% dips for 5 & 50 periods on AC supply ports ±10% fluctuations for 15min on AC supply ports >95% interruptions for 250 periods on AC supply ports" "60% dips for 100ms on DC supply ports 100% dips for 50ms on DC supply ports ±20% fluctuations for 15min on DC supply ports 5sec interruptions on DC supply ports	

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	1756-PA75R/A	1756-PB75R/A
Certifications: (when product is marked)	<p>The following certifications apply to both power supplies:</p> <p>UL UL Listed Industrial Control Equipment</p> <p>c-UL-us UL Listed for Class I, Division 2 Group A,B,C,D Hazardous Locations, certified for U.S. and Canada</p> <p>CSA CSA Certified Process Control Equipment</p> <p>CSA CSA Certified Process Control Equipment for Class I, Division 2 Group A,B,C,D Hazardous Locations</p> <p>FM FM Approved Equipment for use in Class I Division 2 Group A,B,C,D Hazardous Locations</p> <p>CE⁽⁷⁾ European Union 89/336/EEC EMC Directive, compliant with: EN 50082-2; Industrial Immunity EN 61326; Meas./Control/Lab., Industrial Requirements EN 61000-6-2; Industrial Immunity EN 61000-6-4; Industrial Emissions</p> <p>1756-PA75R only - European Union 73/23/EEC LVD Directive, compliant with: EN 61131-2; Programmable Controllers</p> <p>C-Tick⁽⁷⁾ Australian Radiocommunications Act, compliant with: AS/NZS CISPR 11; Industrial Emissions</p> <p>EEx⁽⁷⁾ European Union 94/9/EC ATEX Directive, compliant with: EN 50021; Potentially Explosive Atmospheres, Protection "n" (Zone 2)</p> <p>1756-PA75R only - when conformal coated</p>	

⁽¹⁾ For more information on Input Power, Input Power Requirements and Transformer Sizing on page 19.

⁽²⁾ The combination of all output power (5.1V backplane, 24V backplane, 3.3 V backplane, and 1.2V backplane) must not exceed 75 W.

⁽³⁾ Time between input voltage removal and dc power failure.

⁽⁴⁾ Use time-delay type overcurrent protection in all ungrounded conductors.

⁽⁵⁾ This fuse is intended to guard against fire hazard due to short circuit conditions.

⁽⁶⁾ Use this Conductor Category information for planning conductor routing. Refer to Publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines".

⁽⁷⁾ See the Product Certification link at www.ab.com for Declarations of Conformity, Certificates, and other certification details.

www.rockwellautomation.com

Corporate Headquarters

Rockwell Automation, 777 East Wisconsin Avenue, Suite 1400, Milwaukee, WI, 53202-5302 USA, Tel: (1) 414,212,5200, Fax: (1) 414,212,5201

Headquarters for Allen-Bradley Products, Rockwell Software Products and Global Manufacturing Solutions

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414,382,2000, Fax: (1) 414,382,4444
 Europe: Rockwell Automation SA/NV, Vorstlaan/Boulevard du Souverain 36-BP 3A/B, 1170 Brussels, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
 Asia Pacific: Rockwell Automation, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Headquarters for Dodge and Reliance Electric Products

Americas: Rockwell Automation, 6040 Ponders Court, Greenville, SC 29615-4617 USA, Tel: (1) 864,297,4900, Fax: (1) 864,281,2433
 Europe: Rockwell Automation, Brühlstraße 22, D-74834 Elztal-Dallau, Germany, Tel: (49) 6261 9410, Fax: (49) 6261 17741
 Asia Pacific: Rockwell Automation, 55 Newton Road, #11-01/02 Revenue House, Singapore 307987, Tel: (65) 351 6723, Fax: (65) 355 1733

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